

Application No. 10/088,049
Filed: June 4, 2002
Docket No.: 12742.0019USWO

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-18 (Cancelled)

Claim 19 (Previously presented): A process for the improvement of the water quality of biological maintenance systems, comprising adding to the maintenance system individually or in combination:

- a) for the lowering of the phosphate concentration, at least one easily or sparingly soluble Al^{3+} , Fe^{3+} , TiO^{2+} , ZrO^{2+} or Ca^{2+} salt of an organic carboxylic acid, or in admixture with an organic carboxylic acid;
- b) for the lowering of the nitrate concentration or limitation of the nitrate increase, at least one water-soluble N-free, biologically decomposable organic compound;
- c) for the increasing of the carbonate hardness or of the HCO_3^- concentration, at least one alkali metal or alkaline earth metal salt of a carboxylic acid;
- d) for the increasing of the total hardness or of the concentration of Ca^{2+} and Mg^{2+} hydrogen carbonate, a mixture of at least one Ca^{2+} and Mg^{2+} salt of an organic carboxylic acid; and
- e) for the increasing of the CO_2 concentration, at least one biologically decomposable compound.

Claim 20 (Previously presented): The process according to claim 19, comprising for the lowering of the phosphate concentration, adding an Al^{3+} , Fe^{3+} , TiO^{2+} , ZrO^{2+} and/or Ca^{2+} acetate, formate, tartrate and/or citrate.

Claim 21 (Previously presented): The process according to claim 20, wherein 1 to 100 mg/l aluminum and/or iron (III) citrate is added weekly or biweekly.

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Claim 22 (Previously presented): The process according to claim 20, wherein 10 to 40 mg/l aluminum and/or iron(III) citrate is added weekly or biweekly.

Claim 23 (Previously presented): The process according to claim 19 comprising, for the lowering of the nitrate concentration or limiting of the nitrate increase, adding at least one of an alcohol, a sugar, or a carboxylic acid.

Claim 24 (Previously presented): The process according to claim 23, wherein at least one of glycerol, sorbitol or ethanol, a pentose, a hexose or saccharose or acetic, citric, tartaric or lactic acid are added.

Claim 25 (Previously presented): The process according to claim 23, wherein a mixture of citric or acetic acid and saccharose or a mixture of citric acid, tartaric acid and saccharose is added.

Claim 26 (Previously presented): The process according to claim 23, wherein 15 to 100 mg/l of the compound or the mixture is added every second day or three times weekly.

Claim 27 (Previously presented): The process according to claim 23, wherein 5 to 40 mg/l of the compound or the mixture is added every second day or three times weekly.

Claim 28 (Previously presented): The process according to claim 19 comprising for the increasing of the carbonate hardness or of the HCO_3^- concentration, adding at least one alkali metal or alkaline earth metal salt of an aliphatic carboxylic acid.

Claim 29 (Previously presented): The process according to claim 28, wherein the alkali metal or alkaline earth metal salt is a salt of citric, acetic, lactic, tartaric, formic, propionic or malic acid.

Claim 30 (Previously presented): The process according to claim 19, comprising for the increasing of the total hardness or of the concentration of Ca^{2+} and Mg^{2+} hydrogen carbonates, further adding Ca^{2+} and Mg^{2+} chloride and/or sulphate.

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Claim 31 (Previously presented): The process according to claim 19, comprising for the increasing of the CO₂ concentration, adding daily or every two days at least one of a carboxylic acid, an alcohol or a sugar.

Claim 32 (Previously presented): The process of claim 31, wherein at least one of glycerol, sorbitol or ethanol, a pentose, a hexose or saccharose or acetic, citric or lactic acid are added.

Claim 33 (Previously presented): The process according to claim 31 wherein 1 to 20 mg/l everyday or 2 to 40 mg/l every two days, at least one of a carboxylic acid, alcohol or sugar is added.

Claim 34 (Previously presented): The process according to claim 19 further comprising adding an amount of oxygen or hydrogen peroxide equivalent to the O₂ requirement of the maintenance system.

Claim 35 (Previously presented): A kit comprising: a single or multiple component product for the improvement of the water quality of biological maintenance systems in dosage forms as an aqueous concentrate or a solid, and a package leaflet providing specifications for said dosages which single or multiple component comprises:

- 1) at least one easily or sparingly soluble Al³⁺, Fe³⁺, TiO²⁺, ZrO²⁺ or Ca²⁺ salt of an organic carboxylic acid, or in admixture with an organic carboxylic acid;
- 2) at least one water-soluble, N-free biologically decomposable organic compound;
- 3) at least one alkali metal or alkaline earth metal salt of an organic carboxylic acid; and
- 4) a mixture of at least one Mg²⁺ and Ca²⁺ salt of an organic carboxylic acid.

Claim 36 (New): A single or multiple component product for the improvement of the water quality of biological maintenance systems comprising

- 1) at least one easily or sparingly soluble Al³⁺, Fe³⁺, TiO²⁺, ZrO²⁺ or Ca²⁺ salt of an organic carboxylic acid, or in admixture with an organic carboxylic acid;

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- 2) at least one water-soluble, N-free biologically decomposable organic compound;
- 3) at least one alkali metal or alkaline earth metal salt of an organic carboxylic acid;
and
- 4) a mixture of at least one Mg^{2+} and Ca^{2+} salt of an organic carboxylic acid.